# 01 PhD position in the project 'Reconfigurable Energy Enhanced Architecture for Efficient Utilization of Stored Energy'

**Project description:**
You will be participating in the project 'Reconfigurable Energy Enhanced Architecture for Efficient Utilization of Stored Energy'. The project focuses upon the optimization of energy cost, batteries life by improving the charging and discharging properties and the dynamic characteristics of the batteries. The project is funded by Higher Education Commission (HEC) under National Research Programme for Universities (NRPU) and will be conducted at the Department of Mechatronics Engineering, Air University, Islamabad.
Principal Investigator (PI) is Dr. Muhammad Umer Khan, and Co-PI is Dr. Zareena Kausar.

**Project Objectives**
The project will have following objectives:

**i.** To Balance voltage in parallel connected battery's sub-networks.
**ii.** Have a battery's capacity balance in series connected battery's sub-networks.
**iii.** Taking sub-network as a unit and balancing them with each other with both voltage and capacity.
**iv.** Intelligently transfer the load on batteries with preference given to battery with more state of charge.
**v.** To build a thermal management system in order to observer the temperature rating at different regions of network.

**Responsibilities of PhD candidate**:
- Synopsis approval, courses completion within two years; Regular presentation of intermediate research results at workshops and conferences;
- Publication of at least two peer-reviewed articles in established international journals;
- Co-organization of project workshops and conferences;
- Participation in the training programs and expert meetings scheduled for the project group;

**Qualifications Required:**

- Master's degree in a relevant discipline (Electrical, Electronics, Mechatronics), candidates having research track record will be preferred;
- Excellent English oral proficiency, academic writing and presentation skills;
- Programming expertise in MATLAB® and electronics related softwares;
- Ability to meet deadlines and work both as an independent researcher and as a team member;
- Good organizational, social and communication skills.

**About the organization:**
Air University is a federally chartered public sector university established in 2002. The campus is located near the Margalla foothills in the south east corner of sector E-9 (PAF Complex) of Islamabad. The main entrance is adjacent to the intersection of Agha Shahi Avenue (9th Avenue) and Khayaban-e-Iqbal (Margalla Road).

The Mechatronics Engineering Department, established in 2003, has graduated eleven batches with Bachelors degrees, and has an academic staff of 26 with 05 senior Ph.D. faculty members. The laboratories include CNC machines, robotics and industrial automation, thermofluids, control and automation, heat transfer, mechanics of materials, and a general mechanical workshop. Other common university facilities available to the department are computer labs, library and labs of digital electronics and microprocessors.

**Additional information**
For additional information, please contact PI, Muhammad Umer Khan or Co-PI Zareena Kausar.

**Apply**
If interested in applying for the advertised PhD positions, please submit digital copies of:

- A cv including full personal and academic details;
- A cover letter detailing why you should be considered for the position;
- Certified copies of relevant degrees and grade transcripts;
- Master's thesis and other relevant publications;
- Names and full contact details of two academic referees.

Please send the above information and credentials to umer.khan@mail.au.edu.pk.

**The application deadline is**

12/09/2017